

[ABSTRACTS](#)[AUTHOR INDEX](#)[KEYWORD INDEX](#)[SEARCH](#)[MAIN MENU](#)**89 ACCURACY ANALYSIS OF THREE-DIMENSIONAL ARTICULAR-EMINENCE INCLINATION MEASURING METHODS***Thursday, September 11, 2014: 10:45 a.m. - 12:15 p.m.**Location: Asimon (Valmar Lacroma Hotel)**Presentation Type: Oral Session***J. KRANJCIC¹, M. SLAUS², S. PERSIC¹, S. MILARDOVIC ORTOLAN¹, M. VODANOVIC¹, and D. VOJVODIC¹**, ¹School of Dental Medicine, University of Zagreb, Zagreb, Croatia, ²Croatian Academy of Sciences and Arts, Zagreb, Croatia**Objective:**

Due to the complex anatomical structure and function of the human temporomandibular joint (TMJ) different measurement methods were developed and introduced in TMJ. Therefore, the aim of this study was to determine and compare the accuracy between different methods used for the articular-eminence inclination (AEI) measurements.

Method:

The study was carried out on 30 human (aged 18 to 55 years) dry skulls from early medieval period excavated in Croatia. All selected skulls were without any damage in the measured area (articular eminence, fossa articularis, meatus acusticus externus, and orbitae). Silicone impressions of the articular eminence and fossa were made in order to ease the measurement of AEI. The measurements were performed using two dimensional digitalization of silicone impressions and VistaMetrix software, three-dimensional laser and three-dimensional optical digitalization with compatible softwares. AEI was measured in relation to the Frankfurt horizontal plane using two methods ("best fit line" method and „fossa roof – eminence top" method). The results obtained were statistically analyzed (descriptive statistics, paired-sample Student's t-test, $p < 0.05$).

Result:

Differences between two methods of AEI measurements ("best fit line" method and „fossa roof – eminence top" method) were statistically significant with significantly higher AEI values measured when using „best fit line" method ($p < 0.05$). Comparison of the results obtained by different methods of digitalization revealed that differences exist but mostly they were not statistically significant ($p > 0.05$).

Conclusion:

Measurements carried out on silicone impressions of articular-eminence eased the measurement procedure and retained accuracy. Both three-dimensional measurement methods using different instruments (optical and laser) confirmed their accuracy revealing no significant difference. Measured AEI values obtained by „best fit line" method were higher than values measured by „fossa roof – eminence top" method, and greatly affected by the eminence height thus representing simplified but actual condylar path.

Student Presenter**Keywords:**

Anthropology, Articular-eminence inclination, Prosthodontics and TMJ and masticatory muscles

Presenting author's disclosure statement:

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Signed on 04/17/2014 by J. KRANJCIC

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